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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,018	07/09/2003	Masatoshi Nakatsu	115912	8763
25944	7590	03/22/2004	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			LERNER, AVRAHAM H	
			ART UNIT	PAPER NUMBER

3611

DATE MAILED: 03/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/615,018

Applicant(s)

NAKATSU ET AL.

Examiner

Avraham Lerner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0703.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

1. The Information Disclosure Statement, filed July 9, 2003, is acknowledged and has been considered.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. **It should avoid using phrases which can be implied**, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The abstract of the disclosure is objected to because it should not begin with "This invention relates to...". Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 5, 6, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Shindo et al. (U.S. Patent No. 6,164,150).

Shindo et al. discloses a steering apparatus comprising all elements as claimed, including a variable gear ratio device (see Figs. 12 and 13) which includes an input shaft (12a) connected to a steering wheel side and an output shaft (12b) connected to a turning wheel side, and which changes a ratio between a steering angle input to the input shaft and a rotational angle output to the output shaft using rotation of a motor (140); a rotation detecting device (26) which inherently repeatedly outputs, the motor rotates as is old and well known in the art, a series of a predetermined number of different signals, the signals differing according to the rotation of the motor, so as to detect a rotational position of a rotating shaft of the motor; and a lock mechanism including a lock holder (168) which rotates together with the rotating shaft (150) of the motor, and in which plural indented portions (168a) are formed at an outer periphery portion thereof, and an engagement member (160a) which is fitted on a stator side of the motor, the lock mechanism restricting relative rotation of the input shaft and the output shaft by inserting the engagement member in one of the indented portions, wherein a play angle between the engagement member and the indented portion when the engagement member is inserted in the indented portion is inherently smaller than a first rotational angle of the motor which is required for outputting all of the predetermined number of different signals the play angle also inherently being smaller than a second rotational angle of the motor which is required for outputting all of the signals, the number of which is smaller than the predetermined number by one and a third

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rotational angle of the motor which is required for outputting each of the signals is the same, the protruding portions, each of which is formed between the indented portions adjacent to each other, has a width that is equal to or larger than a width equivalent to the third rotational angle.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shindo et al. in view of Horton et al. (U.S. Patent No. 6,354,396 B1).

Shindo et al. discloses an apparatus comprising all elements as claimed, as recited above in detail, except for explicitly teaching the relative angle which is required for outputting each of the signals to be 15 degrees, or that the rotation detecting device utilizes a plurality of magnets and detectors as claimed in detail.

Horton et al. discloses that it is known in the art to provide a steering angle rotation detector with a plurality of magnets and detectors, the detectors being provided in a width of a magnetic pole of one of the magnets in a width direction (note in Fig. 4, the relative distances).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the steering angle detector of Shindo et al. with the plurality of magnets and detectors as taught by Horton et al. in order to provide the steering apparatus with a known reliable structure for determining how far an operator has rotated a steering wheel, and to

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supply this information to a controller. Note also that it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the "third rotational angle" 15 degrees as recited in claim 4, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kojo et al. (U.S. Patent Application Publication No. 2004/0016591 A1), Ogawa et al. (U.S. Patent No. 6,705,424 B2), Yamauchi (U.S. Patent No. 6,179,083), Matsuda et al. (U.S. Patent No. 6,470,993 B1), Shimizu (U.S. Patent No. 5,423,391), Shimizu (U.S. Patent No. 4,715,461), and Matsunaga et al. (U.S. Patent No. 4,940,105) disclose steering assemblies having input shaft rotation detectors and gear reduction devices.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Avraham Lerner whose telephone number is (703) 308-0423. The examiner can normally be reached on M-F (8:15-5:45) first Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lesley Morris can be reached on (703) 308-0629. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AVRAHAM LERNER
PRIMARY EXAMINER

A. Lerner 3/16/04

March 16, 2004